



**Training Proposal for:  
Home Energy Systems, Inc.**

**Clean Energy Workforce Training Program (CEWTP)**

**Agreement Number: ET10-0602**

Panel Meeting of: January 29, 2010

ETP Regional Office: **San Diego**

Analyst: J. Davey

**PROJECT PROFILE**

Contract  
Type: SB <100 Retrainee

Industry  
Sector(s): Green Technology  
Job Creation

Counties  
Served: San Diego

Union(s): ☐ Yes ☒ No

**FUNDING DETAIL**

All funding will be under the American Recovery and Reinvestment Act (ARRA).

Program Costs	Total ETP Funding	In-Kind Contribution
\$110,500	\$110,500	\$112,000

**TRAINING PLAN TABLE**

Job No.	Job Description (by Contract Type)	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Retrainee/SB<100	Commercial Skills	25	24-300	0-42	\$4,420	\$14.30
				Weighted Avg: 170			

**ETP Minimum Wage by County (Benchmark Wage):** \$14.30 per hour for San Diego County

**Health Benefits:** ☒ Yes ☐ No This is employer share of cost for healthcare premiums – medical, dental, vision.

**Used to meet the Post-Retention Wage?:** ☒ Yes ☐ No

\$1.40 per hour may be used to meet the Post-Retention Wage.

Wage Range by Occupation	
Occupation Title	Wage Range
Solar Panel Installation Technician	

**INTRODUCTION**

In this proposal, Home Energy Systems, Inc. (HES) seeks funding for retraining as outlined below:

Located in San Diego and owned by CEO and Founder Martin Learn Ph.D., HES specializes in the design, fabrication, installation, and maintenance of solar-powered electricity generating systems for commercial, residential, industrial, and governmental institutions. In business since 2001, HES focuses on the latest technological developments and current industry products to provide cost and energy-efficient systems. HES is eligible for funding under CEWTP.

HES has installed solar electric systems throughout San Diego County, including the US Naval Air Station in Coronado, the Vallecitos Water District, and the Monterey Ridge Elementary School. HES purchases solar panel installation equipment from manufacturers such as Sunpower, Kyocera, BP, Unisolar, SMA America (Sunny Boy), Xantrex, and many other top quality U.S. manufacturers.

**PROJECT DETAILS**

The company plans to expand its workforce to meet the growing demand for both residential and commercial photovoltaic installations in San Diego County and other regions of Southern California. Furthermore, because this industry is still in its infancy, finding trained workers has been challenging.

The company is expected to hire 10 additional solar panel installation technicians and train them, along with 15 of its currently employed workers, for an average of 170 hours of classroom, productive laboratory, and computer-based training. Training will be provided by both in-house staff and selected training vendors. The 10 additional trainees will be hired through referrals from a local Metro United Methodist Urban Ministries program that assists at-risk youth to find meaningful, long-term employment. HES will also hire through the local one-stop career centers which will screen and refer eligible candidates.

All workers will receive training in the operation of photovoltaic systems, site assessment, mounting, wiring, testing, and troubleshooting. Photovoltaic systems training is time consuming, broad in scope and subject, highly technical, and costly. Trainees will typically receive at least 170 hours of classroom, productive laboratory, and online training hours. The retention period may be 200 hours within 365 days, consistent with the Panel's guidelines for CEWTP.

This training program will enable HES to grow in size and provide much needed new jobs in the high demand field of energy efficiency. Training will also provide the highest caliber of industry recognized training to new hires and incumbent workers that will lead to certification by the North American Board of Certified Energy Practitioners (NABCEP). Training will take place in San Diego and Concord.

### **RECOMMENDATION**

For the reasons set forth above, staff recommends approval of this proposal.

### **DEVELOPMENT SERVICES**

The company retained Rebecca Bennion in San Diego to assist with development of this proposal charged at an hourly rate totaling \$2,500.

### **ADMINISTRATIVE SERVICES**

To Be Determined

### **TRAINING VENDORS**

Sunpower of Concord will provide a portion of training at an amount yet to be determined. Other trainers will be identified for ETP record-keeping purposes, as they are retained by HES.

**Exhibit B: Menu Curriculum****Class/Lab Hours****Commercial Skills****24 - 300****I. Photovoltaic Systems Overview**

- Definition of Photovoltaic
- Photovoltaic Systems Operations
- Chemical Doping
- Array Design
- Stringing – Parallel vs. Series
- String Sizing

**II. Site Assessment**

- Identifying Service Entrance
- Roof Mounting
- Ground Mounting
- Structural Mounting
- Inclination & Azimuth

**III. Jobsite Safety**

- Ladder Safety
- Scaffolding
- Electrical Safety
- Fall Prevention
- Basic First Aid

**IV. Mounting**

- Mounting Hardware
- Racking Design
- Landscape vs. Portrait
- Flush Mount
- Flat Mount
- Tilt Mount

**V. Array Mounting**

- Mounting Hardware
- Stringing/Homeruns
- EMT & PVC
- Junction Box Wiring

**VI. Inverters**

- Inverter Sizing
- Hanging
- Wiring
- AC & DC Disconnects

**VII. System Testing & Troubleshooting**

- Photovoltaic Systems Testing/Troubleshooting Techniques

**VIII. Sunpower Installer Certification Class**

- Installing Sunpower Photovoltaic Systems

**CBT Hours**

0- 42

**I. Photovoltaic Systems Overview**

- Photovoltaic Systems Operations and Design - 3

**II. Site Assessment**

- Service Entrance, Roof/Ground Mounting, Inclination - 4

**III. Jobsite Safety**

- Ladder Safety, Scaffolding, Electrical Safety, Fall Prevention - 5

**IV. Mounting**

- Mounting Hardware - 3

**V. Array Mounting**

- Mounting Hardware, Stringing/Homeruns, Conduit, Junction Box Wiring - 3

**VI. Inverters**

- Inverter Sizing, Placement, Wiring, Disconnects (AC/DC) - 2

**VII. System Testing & Troubleshooting**

- Photovoltaic Systems Testing/Troubleshooting Techniques - 1 hour

**VIII. Sunpower Installer Certification Class**

- Installing Sunpower Photovoltaic Systems - 21 hours

Note: Reimbursement for retraining is capped at 300 total productive lab training hours per trainee. Reimbursement for CBT is limited to 50% of the total training hours per-trainee.
---